



Engineering Services Monthly Report

City Council Meeting: January 5, 2016

Welcome to the City of Frisco Engineering Services Department monthly report.

This report provides a brief status of current roadway, traffic signal, arterial lighting, water and wastewater, and drainage capital projects. The status provides approximate schedules and costs. The report also includes highlights of various activities of the traffic division and a summary of development review activity.

Our department's core functional areas include:

Capital Project Delivery – Administration of the city's bond funded projects related to new roads, drainage, traffic signals, roadway median lighting, water distribution, and wastewater collection.

Development Review – Construction plan review and field inspection of infrastructure that is built by private development and accepted by the City of Frisco.

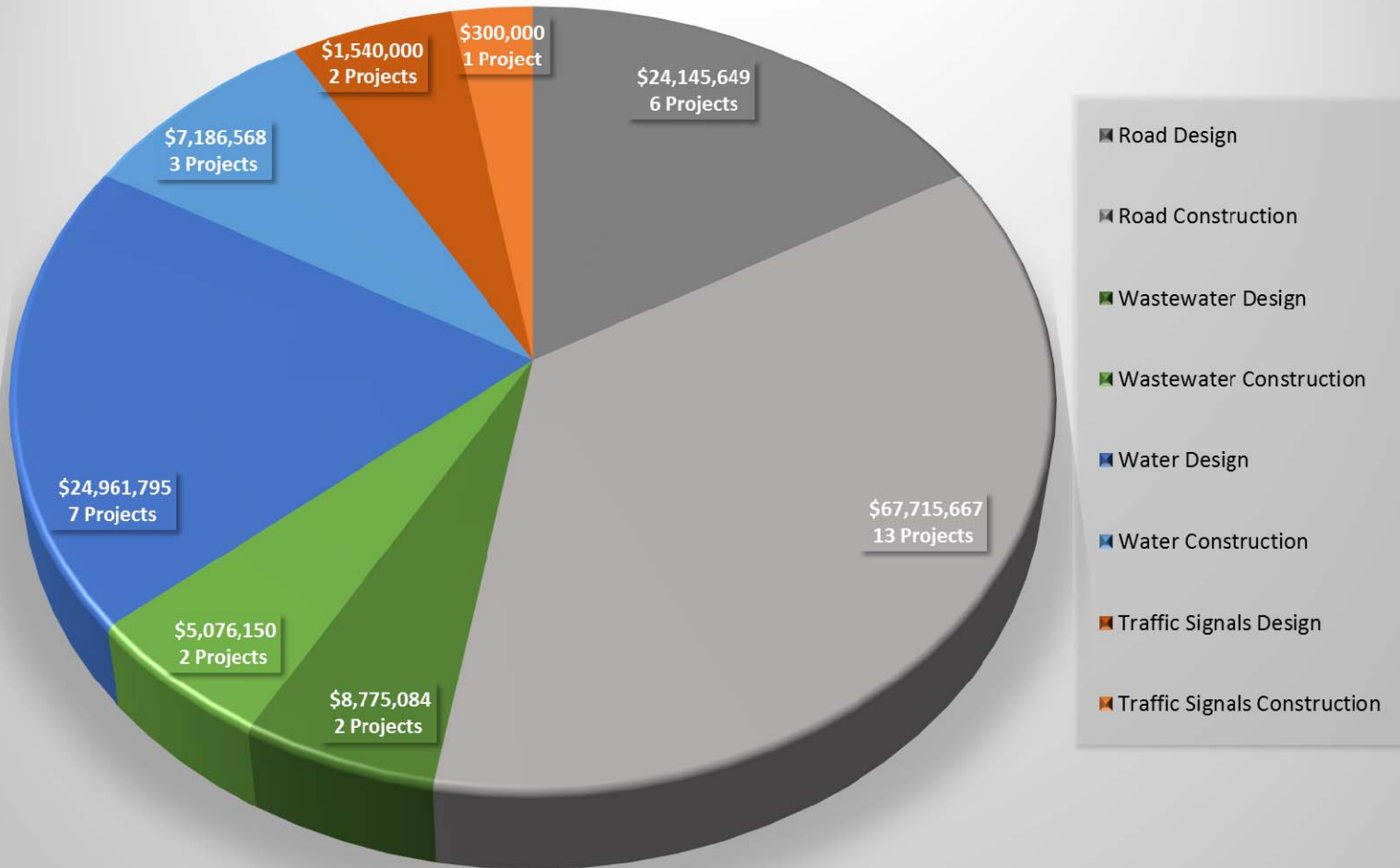
Traffic Operations – Operation and maintenance of the city's traffic signal system, roadway median lighting, traffic signs and pavement markings, school zone and pedestrian safety, and special events.

Our staff is committed to resident focus and good stewardship of the city's resources. Our vision is to deliver the highest quality infrastructure and level of service for present and future residents of Frisco.

Please feel free to contact us with questions or comments.

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Q3 (Jul-Sep) 2015 Capital Projects Count



FM 423 [North] (Project No. 03110) Eldorado Parkway to US 380 [TxDOT]

Project Manager: Matthew Phillips

Description: Replace the existing two-lane asphalt roadway with a six-lane divided concrete roadway. Project includes paving, drainage, signals and lighting.

Status: Construction is approximately 35% complete.

Schedule: Construction is anticipated to be complete in Q4 (Oct-Dec) 2017.

Project Cost: \$28,400,000

City Funding: \$0

Other Funding: \$28,400,000 (Texas Department of Transportation)

*Highlighted portions notate changes from previous month's report.

Stonebrook Parkway (Project No. 11132) Fighting Eagles to Longhorn Trail

Project Manager: David L. Chacon

Description: Construct a new six-lane divided concrete roadway including underpass beneath the BNSF Railroad. Project includes paving, drainage, water, wastewater, sidewalk, lighting, landscaping and irrigation. This project will complete the connection of Stonebrook Parkway between FM 423 and the DNT.

Status: Construction is complete. Contractor is completing punch list items prior to Final Acceptance by the City.

Schedule: Construction is anticipated to be complete in January 2016.

Project Cost: \$17,750,000

City Funding: \$8,150,000

Other Funding: \$9,600,000 (Texas Department of Transportation and the North Central Texas Council of Governments)

Preston Road Intersection Improvements (Project No. 11113) SH 121 to Main St

Project Manager: Matthew Phillips

Description: Construct additional turn lanes at intersections (Warren, Lebanon, Wade, Rolater, and Main) on Preston Rd between SH 121 and Main St.

Status: Design is approximately 60% complete. ROW Acquisition (TxDOT) and utility relocation are underway.

Schedule: Construction schedule to be determined upon TxDOT's completion of ROW acquisition.

Project Cost: \$3,650,000

City Funding: \$832,800

Other Funding: \$2,825,000 (Texas Department of Transportation)

Rockhill Parkway (Project No. 09115) CR 26 to Dallas Parkway

Project Manager: Matthew Phillips

Description: Construct a new six-lane divided concrete roadway. Project includes paving, bridge, retaining walls, drainage, water transmission line, lighting, landscaping and irrigation.

Status: Construction is approximately 90% complete.

Schedule: Construction is anticipated to be complete in Q1 (Jan-Mar) 2016.

Project Cost: \$8,940,000

City Funding: \$5,140,000

Other Funding: \$3,800,000 (Collin County)

Rockhill Parkway (Project No. 08126) Dallas Parkway to Preston Rd

Project Manager: Matthew Phillips

Description: Construct a new six-lane divided concrete roadway. Project includes paving, bridge, retaining walls, drainage, water transmission line, lighting, landscaping and irrigation.

Status: Construction is approximately 90% complete.

Schedule: Construction is anticipated to be complete in Q1 (Jan-Mar) 2016.

Project Cost: \$23,500,000

City Funding: \$14,000,000

Other Funding: \$9,500,000 (Collin County)

Custer Road [FM 2478] (Project No. 09125) SH 121 to Stonebridge

Project Manager: Matthew Phillips

Description: Widen existing 4 lane divided roadway to 6 lanes. Project includes paving, bridge widening, signal modifications and illumination.

Status: Construction expected to begin in January.

Schedule: Construction is anticipated to be complete in Q4 (Oct-Dec) 2016.

Project Cost: \$9,704,050

City Funding: \$1,926,300

Other Funding: \$7,777,750 (Texas Department of Transportation and Collin County)

*Highlighted portions notate changes from previous month's report.

US 380 (E) (Project No. 13145) Lovers Ln to Custer Rd [TxDOT]

Project Manager: Matthew Phillips

Description: Widen the existing five-lane roadway to a six lane divided roadway with median and curb and gutter.

Status: Construction is approximately 65% complete.

Schedule: Construction is anticipated to be complete in Q4 (Oct-Dec) 2016.

Project Cost: \$19,600,000

City Funding: \$0

Other Funding: \$19,600,000 (Texas Department of Transportation)

US 380 (W) (Project No. 13145) CR 26 to Lovers Ln [TxDOT]

Project Manager: Matthew Phillips

Description: Widen the existing five-lane roadway to a freeway section including frontage roads and grade separated intersections at DNT and Preston Road.

Status: Construction began in September.

Schedule: Construction is anticipated to be complete in Q1 (Jan-March) 2019.

Project Cost: \$57,978,700

City Funding: \$344,700 (10% of ROW and Utility Relocation costs)

Other Funding: \$57,978,700 (Texas Department of Transportation)

County Road 26 (Project No. 13136) Rockhill Road to US 380

Project Manager: Matthew Phillips

Description: Construction of six lanes for a new north-south roadway between Rockhill Parkway and US 380, including water and wastewater lines.

Status: Design is complete.

Schedule: Construction schedule has not been determined.

Project Cost: \$4,727,100

City Funding: \$4,727,100

Other Funding: \$0

Roundabout at Intersection of Warren Parkway and Ohio Drive (Project No. 13139)

Project Manager: Jason Brodigan

Description: Retrofit existing intersection as a multilane roundabout.

Status: Staff is working on funding agreements with TxDot and NCTCOG.

Schedule: Construction is anticipated to begin in early 2017.

Project Cost: \$1,900,000

City Funding: \$380,000

Other Funding: \$1,520,000

4th Army (Project No. 11115) Lebanon to Stewart Creek Wastewater Treatment Plant (SCWWTP)

Project Manager: David Chacon

Description: Construct new two lane connection from Lebanon Road to the existing driveway entrance to SCWWTP with concrete pavement, curb and gutter.

Status: Construction is approximately 20% complete.

Schedule: Construction is anticipated to be complete in Q1 (Jan-Mar) 2016.

Project Cost: \$3,173,127

City Funding: \$3,173,127

Other Funding: \$0

4th Army (Project No. 11115) Stewart Creek Wastewater Treatment Plant to Timber Ridge

Project Manager: David Chacon

Description: Reconstruct the roadway with 2 lanes of concrete pavement and curb and gutter and construct bridge structure over Stewart Creek.

Status: Design is approximately 60% complete.

Schedule: Construction is anticipated to begin in Q2 (Apr-June) 2016.

Project Cost: \$8,583,250

City Funding: \$8,583,250

Other Funding: \$0

Teel Parkway (Project No. 14146) Stafford Middle School to Rockhill

Project Manager: David Chacon

Description: Construction of two lanes of Teel Parkway with concrete pavement and a bridge across the floodplain. The project includes paving, drainage, retaining walls, bridge structure, and illumination.

Status: Construction is approximately 65% complete.

Schedule: Construction is anticipated to be complete in Q2 (Apr-June) 2016.

Project Cost: \$6,435,000

City Funding: \$5,935,000

Other Funding: \$500,000 (Denton County)

2015 Sidewalk Program (Project No. 15115)

Project Manager: Tin Nguyen

Description: Construction of sidewalks and hike and bike trails at various locations to provide walking routes to school and complete gaps in the sidewalk system. The project includes grading, selected sidewalk, hike and bike trail, and barrier free ramps.

Status: Construction is approximately 95% complete.

Schedule: Construction is anticipated to be complete in January 2016.

Project Cost: \$741,400

City Funding: \$741,400

Other Funding: \$0

Dallas Parkway (Project No. 14129) SH 121 to Lebanon Road

Project Manager: Matthew Phillips

Description: Add an additional lane to the northbound and southbound frontage roads to the Dallas North Tollway and construct intersection improvements at Warren/DNT and Lebanon/DNT intersections. Construction of this project will occur in three phases:

- **Phase 1:** Construction of inside widening locations and intersection improvements at Warren Parkway, Lebanon Road

Status: Construction is anticipated to begin in January.

Schedule: Construction is anticipated to be complete in Q3 (July-Sept) 2016.

- **Phase 2:** Construction of outside widening locations

Status: Construction is anticipated to begin in January.

Schedule: Construction is anticipated to be complete in Q3 (July-Sept) 2016.

- **Phase 3:** Landscape and irrigation replacement

Status: Design is expected to begin in Q1 (Jan-Mar) 2016

Schedule: Construction is expected to begin in Q3 (July-Sept) 2016

Project Cost: \$8,235,900

City Funding: \$3,770,750

Other Funding: \$4,465,150 (Collin County and Texas Department of Transportation)

Gaylord Parkway - Warren Parkway to John Hickman Parkway

John Hickman Parkway – Lebanon Road to Dallas Parkway

Project Manager: Jason Brodigan

Description: Construct new four lane roadways for Event Center.

Schedule: Construction is anticipated to be complete in Q3 (July-Sept) 2016.

Project Cost: \$8,000,000

City Funding: \$4,000,000

Other Funding: \$4,000,000 (Collin County)

Lebanon Slope Repair (South) (Project No. 13137)

Project Manager: Tin Nguyen

Description: Repair and stabilize slope failures on south side of Lebanon Road at the BNSF Railroad Bridge.

Status: Construction began in October, and is approximately 75% complete.

Schedule: Construction is anticipated to be complete in January.

Project Cost: \$242,000

City Funding: \$219,635

Other Funding: \$22,365 (HOA)

Lebanon Slope Repair (North) (Project No. 15137)

Project Manager: Jason Brodigan

Status: Construction is complete.

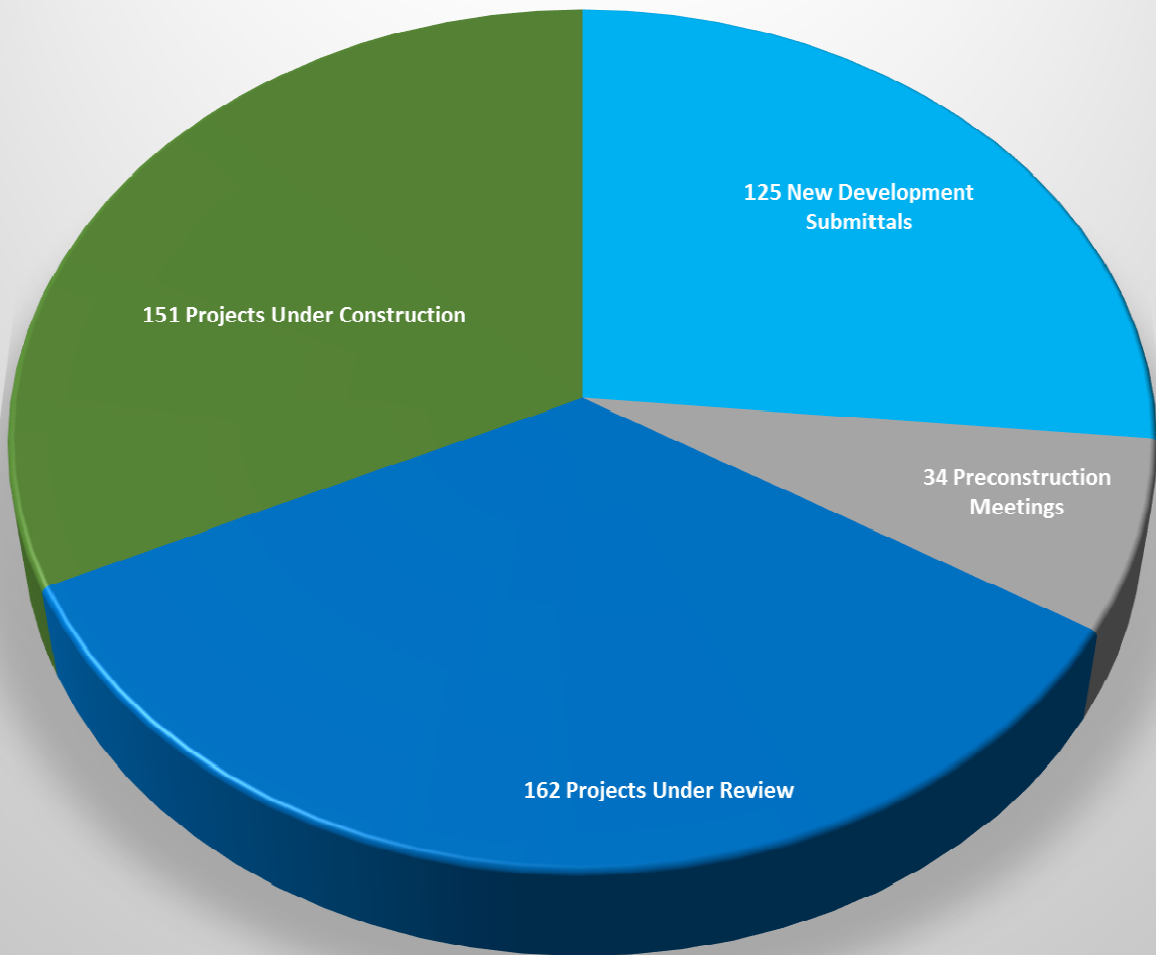
Schedule: Construction was completed in December.

Project Cost: \$243,429

City Funding: \$243,429

Other Funding: \$0

**Private Development Projects
Q3 (Jul-Sep) 2015 - Quarter Totals**



Traffic Signal Projects

Traffic Signal – Custer Road at Ridge Creek Parkway

Project Manager: Shelley Lang

Description: Install a new traffic signal on Custer Road at Ridge Creek Parkway.

Status: Construction began in October, and is approximately 90% complete. Waiting on CoServ to install new concrete poles to provide power to new traffic signal.

Schedule: Construction is anticipated to be complete in January 2016.

Budget: \$300,000

City Funding: \$300,000

Other Funding: \$0

*Highlighted portions notate changes from previous month's report.

Traffic Signal – Legacy Drive at Cotton Gin Road

Project Manager: Shelley Lang

Description: Install a new traffic signal on Legacy Drive at Cotton Gin Road. This project also includes the realignment of Cotton Gin Road starting at Legacy Drive and extending to the west approximately 650 LF.

Status: Design is approximately 30% complete.

Schedule: Construction is anticipated to begin in Q2 (Apr-June) 2016.

Budget: \$1,325,000

City Funding: \$1,306,000

Other Funding: \$19,000

Traffic Signal – Independence Parkway at Sutherland Lane

Project Manager: Shelley Lang

Description: Install a new traffic signal on Independence Parkway at Sutherland Lane.

Status: Bids were opened on December 22, 2015 and construction contract award will be taken to City Council on January 5, 2016 for approval.

Schedule: Construction is anticipated to begin in Q1 (Jan-March) 2016.

Budget: \$300,000

City Funding: \$300,000

Other Funding: \$0

Water Distribution & Wastewater Collection System Projects

West Rowlett Creek WW Main Extension (Project No. 12602) Independence to Coit

Project Manager: David L. Chacon

Description: Wastewater main from Independence Parkway to Coit Road with two additional mains to extend north to Main Street. Includes decommissioning of four lift stations.

Status: Design is 95% complete. Bids are scheduled to be open in February 2016.

Schedule: Construction is anticipated to begin in March 2016.

Project Cost: \$5,100,000

City Funding: \$5,100,000

Other Funding: \$0

North Stewart Creek Interceptor (South) (Project No. 09607) Stewart Creek WWTP to Stonebrook

Project Manager: Art Hartle

Description: Install sanitary sewer from Stewart Creek Wastewater Treatment Plant northward to Stonebrook to provide additional capacity for growth in the Stewart Creek drainage basin.

Status: Design is 90% complete. ROW acquisition is in progress.

Schedule: Construction is anticipated to begin in Q2 (Apr-June) 2016.

Project Cost: \$4,317,300

City Funding: \$4,317,300

Other Funding: \$0

North Stewart Creek Interceptor (North) (Project No. 09607) Stonebrook to Dallas Parkway

Project Manager: Art Hartle

Description: Install sanitary sewer from Stonebrook to Dallas Parkway to provide additional capacity for growth in the Stewart Creek drainage basin.

Status: Design is currently on hold.

Schedule: Construction schedule has not been determined.

Project Cost: \$4,265,700

City Funding: \$4,265,700

Other Funding: \$0

Dallas Parkway 20" Waterline (Project No. 06610) Main Street to Stallion Lane

Project Manager: David L. Chacon

Description: Construction of a 20 inch water line along Dallas Parkway from Stonebrook to Main.

Status: Construction is expected to begin in January.

Schedule: Construction is anticipated to be complete in Q3 (July-Sept) 2016.

Project Cost: \$1,853,600

City Funding: \$1,853,600

Other Funding: \$0

Stonebrook Elevated Water Storage Tank (Project No. 14607)

Project Manager: Art Hartle

Description: Construct new 2.0 million gallon tank to serve growth on the west side.

Status: Construction is expected to begin in January.

Schedule: Construction is anticipated to be complete in Q1 (Jan-Mar) 2018.

Project Cost: \$5,534,400

City Funding: \$5,534,400

Other Funding: \$0

Lone Star Ranch Wastewater Lift Station Capacity Improvements (Project No. 12606)

Project Manager: Art Hartle

Description: Evaluation, design and construction of improvements to accommodate current growth in the southwest portion of the city.

Status: Design is approximately 60% complete.

Schedule: Construction is anticipated to begin in Q2 (Apr-June) 2016.

Project Cost: \$6,200,000

City Funding: \$6,200,000

Other Funding: \$0

Northwest Water and Wastewater System Expansion (Project No. 08601)

Project Manager: David L. Chacon

Description: Install looped waterline along FM 423 to US 380. Install wastewater collection main from Panther Creek WWTP north along FM 423 to approximately 3,000 feet south of US 380.

Status: Construction is complete. Contractor is completing punch list items prior to final acceptance.

Schedule: Construction is anticipated to be complete in January.

Project Cost: \$3,853,160

City Funding: \$3,853,160

Other Funding: \$0

Stewart Creek Wastewater Treatment Plant Expansion

Project Manager: Paul Knippel

Description: Increase capacity from 5.0 million gallons per day (MGD) to 10.0 MGD. Project design and construction is being administered by North Texas Municipal Water District.

Status: Construction began in October.

Schedule: Construction is anticipated to be complete in Q4 (Oct-Dec) 2017.

Project Cost: \$60,429,000

City Funding: \$60,429,000

Other Funding: \$0

Stewart Creek Reuse Line (Project No. 14601)

Project Manager: Art Hartle

Description: Construction of a 12 inch reuse water line along Lebanon Road and south down Gaylord Parkway to provide reuse water to area along Dallas North Tollway from Warren Parkway to Lebanon Road.

Status: Construction began in October..

Schedule: Construction is anticipated to be complete in February 2016.

Project Cost: \$3,149,600

City Funding: \$3,149,600

Other Funding: \$0

Water/Wastewater/Reuse Master Plan Update

Project Manager: Jason Brodigan

Description: Preparation of new capital improvement plans for water, wastewater, and reuse water projects.

Status: Project began in November 2014.

Schedule: Project is anticipated to be complete in Q2 (Apr-June) 2016.

Project Cost: \$425,000

City Funding: \$425,000

Other Funding: \$0

Preston Vineyard Wastewater Rehab (SC5-16) (Project No. 15601)

Project Manager: Art Hartle

Description: Study and alternative analysis for capacity improvements in area near Preston and Preston Vineyard.

Status: Preliminary Design is complete.

Schedule: Construction schedule has not been determined.

Project Cost: \$73,245

City Funding: \$73,245

Other Funding: \$0

Lebanon Wastewater Lift Station and Force Main (Project No. 15608)

Project Manager: Art Hartle

Description: Construction of a wastewater Lift Station and Force Main along Lebanon Road to Stewart Creek Wastewater Treatment Plant to provide wastewater service to area along Dallas North Tollway from Warren Parkway to Lebanon Road.

Status: Design began in December.

Schedule: Construction is anticipated to begin in Q2 (Apr-June) 2017.

Project Cost: \$12,100,000

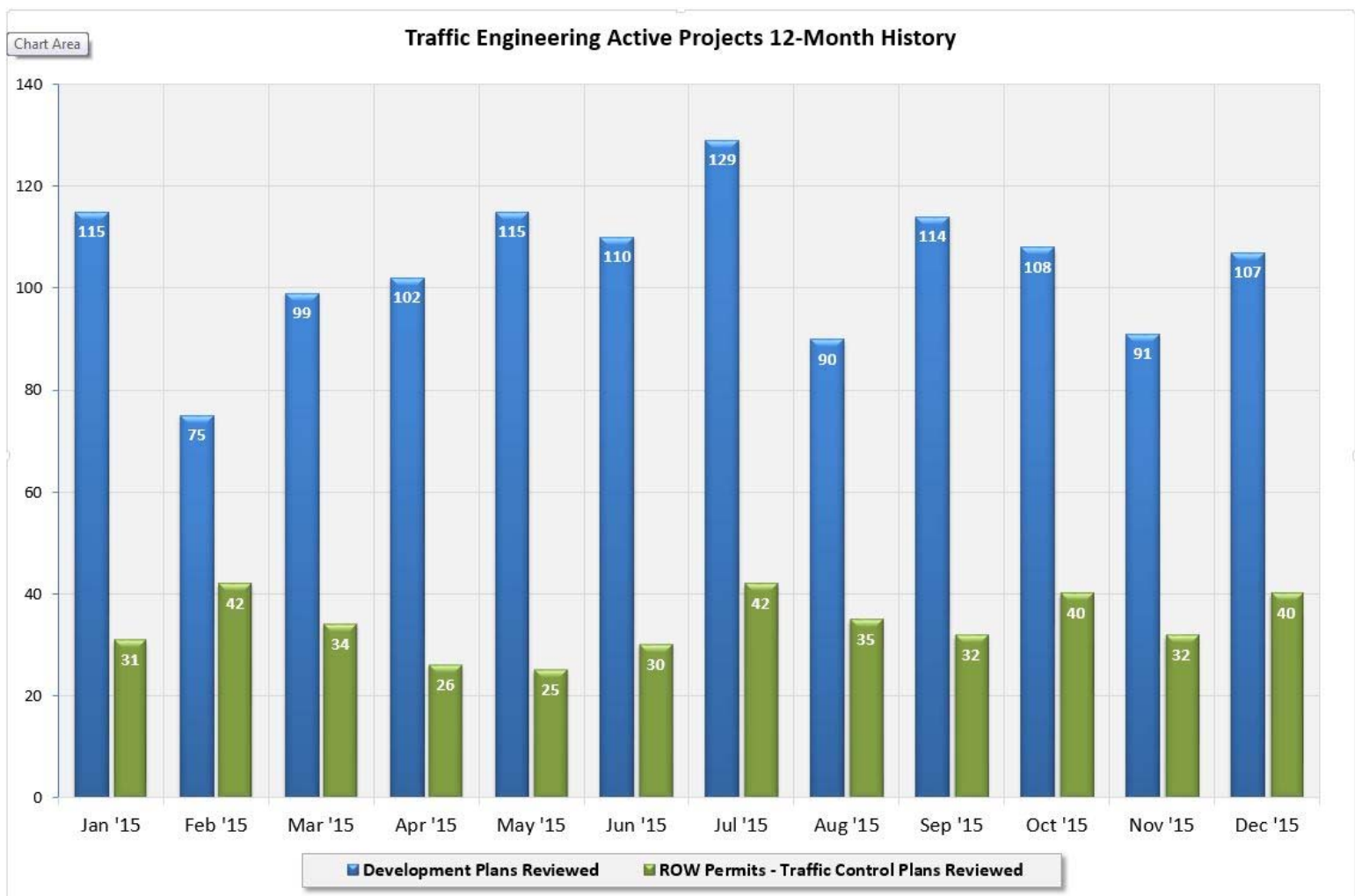
City Funding: \$12,100,000

Other Funding: \$0

Drainage Projects

Creek Master Plans - Comprehensive hydrologic and hydraulic studies are being performed on the city's five major watersheds. These studies will provide consistency and continuity to the city's floodplain modeling and mapping. They will facilitate the development process and provide a baseline for floodplain reclamation and mitigation efforts. Studies have been completed for Stewart Creek, Cottonwood Branch, Panther Creek Watershed, and West Rowlett Creek Watershed.

Traffic & Transportation Highlights



Development/CIP Plan Reviews – Staff meets with landowners and developers to answer questions about transportation requirements for future development. Staff reviews all development plans and plats that are submitted to the City and works with developers and their engineers to resolve any design and/or construction issues. This month, staff reviewed 107 sets of development plans and processed two TxDOT driveway permits. Staff also finalized two right-of-way encroachment agreements with developers.

*Highlighted portions notate changes from previous month's report.

Bicycle-Friendly Community – There is a committee that works towards Frisco being named a bicycle-friendly community by championing and prioritizing various development, infrastructure, and outreach policies and improvements. The Transportation Division has a seat on the committee, as do other departments as well as Frisco ISD and the bicycling community. A Transportation staff member also attends the quarterly meetings of the North Central Texas Council of Governments' Bicycle and Pedestrian Advisory Committee. Transportation Staff is currently working with the Parks Department on an update to the City's Hike & Bike Master Plan which includes a large public input component.

Citizen Inquiries – Staff has responded to several citizen inquiries that came into the department by telephone, email, and the Q&A Message Board on the City website.

Miscellaneous Traffic Studies – Staff continues to update the crash database (based on police reports). The database is used to identify problem areas that need to be addressed. Staff is currently working on integrating the crash database with the new automated police report system that has been implemented by the Police Department. Staff conducted several neighborhood traffic studies at the request of citizens. For the past two months, staff has been conducting traffic studies at multiple locations that we monitor for the possible implementation of a traffic signal to determine if any locations have reached the traffic levels that warrant a traffic signal.

Rectangular Rapid Flashing Beacons – A new type of crosswalk device has been given interim approval by the Federal Highway Administration. This device is expected to increase pedestrian safety at mid-block crosswalks. The Rectangular Rapid Flashing Beacon (RRFB) uses a pedestrian push button to activate a set of flashing yellow lights installed on warning signs. The flashing lights are intended to alert drivers to the presence of pedestrians and cause an increase in yield response by the drivers. Staff tested a RRFB in front of Cobb Middle School during the 2012-2013 school year and found an increased rate of yield response by drivers. A new traffic signal was installed at Cobb Middle School and so the RRFB was moved to Roach Middle School in September 2013. Staff is considering installing RRFBs at other mid-block locations as funding permits and in accordance with a prioritization process based on vehicle and pedestrian volumes. An RRFB was activated in August 2015 on West Stonebrook Parkway east of Anthem Drive to help golf carts cross Stonebrook to the new phase of Frisco Lakes and a public education campaign about it is being planned.

Roundabouts – The City currently has 21 single-lane roundabouts in operation (mostly within residential neighborhoods) with several more under construction. Three dual-lane roundabouts are in the beginning stages of construction, which will be the first roundabouts on our arterial roadways. The intersection of Warren Parkway and Ohio Drive is planned to be the first roundabout retrofitted at an existing arterial intersection. Two additional dual-lane roundabouts are being built as part of some new arterials that will be constructed by 2016 (at the intersection of Gaylord Parkway & John Hickman Parkway and at Rockhill Parkway & Teel Parkway). Staff held the first of several public education/outreach activities for the upcoming roundabouts at the Frosty 5K event. Over 60 children's activity booklets and adult educational information sheets were handed out at the event. For more information, visit the Engineering Department's page on the City of Frisco website:

<http://www.friscotexas.gov/departments/engineering/traffic/Pages/ProposedRoundabouts.aspx>

School Zones – Staff meets monthly with representatives of Fisd and the Police Department to discuss any school zone, crossing guard, or sidewalk issues. This month, staff observed traffic operations near a few schools at the request of residents and made recommendations to each school and/or installed a few traffic control signs to address each issue. Staff also reviewed the school attendance boundary changes for 2016 recently approved by the School Board and coordinated with Fisd school officials to budget for additional crossing guards for the next school year.

Special Events – As part of the Special Events Review Committee, staff reviews all pending special event applications for any traffic control needs. Staff continually coordinates with the Police, Fire, Communications, and Public Works Departments regarding any special events that affect traffic flow or parking in the City. Staff also coordinates with Toyota Stadium and Dr Pepper Arena staff regarding large events at those venues, which sometimes requires coordination with NTTA. This month, staff provided traffic management support for the Turkey Trot, Merry Main Street, the Frosty 5K, Christmas in the Square and one soccer game at Toyota Stadium.

Staffing – We are currently advertising for candidates to fill our new Traffic Engineer position.

Training and Conference Attendance – Staff attends the monthly local meetings of the Texas District of the Institute of Transportation Engineers (TexITE). This month, staff attended the City's Core Values training and a roadway safety seminar. Staff was also informed that Frisco will be hosting the 2017 Annual Spring TexITE meeting. This meeting is expected to have over 300 transportation professionals in attendance from across the state of Texas.

Transportation Planning – As development occurs in the City, staff plans the alignment and size of future streets and thoroughfares and the configuration of their intersections. Staff ensures that new thoroughfares that will be part of the arterial network adhere to the approved Thoroughfare Plan and analyzes any changes requested to that plan and makes recommendations to City Council. Staff also plans where future traffic signals will be installed based on development patterns and growth, performs studies to determine when traffic growth reaches a level that warrants a traffic signal, and then compares and ranks all locations so that funding can be allocated to the highest priority locations.

Staff is currently planning the future widening of the Dallas Parkway frontage roads to three lanes in each direction and working with developers to dedicate the right-of-way necessary to widen the frontage roads. Staff is currently working with landowners to reserve right-of-way for improvements along US 380 and is working to finalize the agreements necessary to relocate the right-of-way for future Hillcrest Road so it will align with La Cima Boulevard at US 380. Staff is also in the process of conducting a feasibility study for the potential implementation of roundabouts to improve traffic conditions at existing intersections where a traffic signal would not be warranted (or instead of a traffic signal).

Traffic Count Map – The traffic count map is available on the City's website at <http://maps.friscotexas.gov/>. It provides daily traffic volume counts (and the date of each count) on multiple segments of every major roadway. Staff conducts an annual traffic count program which updates the volumes collected on each major roadway segment every two or three years.

Traffic Control – Each month, staff designs the installation of new and/or replacement signs and pavement markings as needed. Each month, staff reviews the traffic control plans for new and ongoing construction zones and sends announcements to all City services regarding road closures and traffic switches. Staff is coordinating with TxDOT regarding closures, detours and traffic switches along Main Street (FM 3537) and FM 423 during their widening projects. This month, staff oversaw the closure Dallas Parkway for several days so that BNSF could repair the railroad crossings.

Traffic Management Center – The City's Emergency Operations Center (EOC) is used on a daily basis as our Traffic Management Center. The Center is staffed every weekday by Traffic personnel who monitor traffic conditions throughout the City using our network of traffic cameras (described below) and who can remotely modify the operations of the traffic signals or dispatch repair crews and/or coordinate with Fire and Police personnel. Traffic personnel are also in the Center during large special events and during emergency situations and bad weather events. This month, staff observed holiday shopping traffic on Thanksgiving Day and Black Friday.

Traffic Signal System Communications – The system provides communications to all of the traffic signals in the City, allowing staff to monitor and control their operation remotely from our Traffic Management Center or from any City computer. Wireless communication relays are installed on four water towers and two communication towers, all of which have battery backup units. Staff can also view the traffic detection cameras at most of the traffic signals, as well as 100 pan-tilt-zoom (PTZ) traffic cameras that can be controlled remotely.

Traffic Signal Timing – On an ongoing basis, staff monitors and changes the operation of various traffic signals in construction zones as needed. Travel times on the major corridors are also collected to ensure the coordination between traffic signals is optimized as traffic continues to increase in the area and traffic patterns change with new development.

Flashing Yellow Arrow – The Flashing Yellow Arrow (FYA) left-turn display is a new federally mandated way of controlling the left-turn movement at traffic signals. Instead of a circular green indication, motorists will now be shown a flashing yellow arrow to indicate when they are permitted to turn left (after yielding to oncoming traffic). There are currently 66 intersections with FYA left-turn displays. All new traffic signals are being installed with FYA and approximately one existing intersection will be retrofitted each month. A website has been created to inform citizens about the FYA with a link to an instructional video at <http://friscotexas.gov/FYA>.

Traffic Signal Maintenance – The City of Frisco currently operates and maintains 102 traffic signals within the City of Frisco and 11 traffic signals in the Town of Little Elm on behalf of TxDOT and Little Elm. (The number of traffic signals that TxDOT and Little Elm are paying us to operate and maintain will eventually grow to 14 locations.) City crews provide on-call maintenance seven days per week with a maximum 45-minute response time. All but one of these traffic signals have automatic battery backup power.

A significant part of traffic signal maintenance relates to the 443 video cameras and 32 SmartSensor radar units used to detect vehicles at each signal. Currently, 100% of the video is fully operational. Maintaining this video and radar detection is very efficient due to the citywide communication system because diagnosing and troubleshooting detection issues can be performed from our central control center.

Beyond responding to items that need to be constructed or repaired, city crews perform regular preventative maintenance on traffic signal equipment each month. This includes testing of each traffic signal's video detection cameras, "conflict monitor" equipment, and Opticom equipment (which provides emergency vehicle preemption of the traffic signal).

This month, City crews programmed and set in place our electronic message boards to direct traffic at the Turkey Trot, the Frisco Square Christmas Light Show, Merry Main Street, the Frosty 5K, Christmas in the Square, and the Lone Star High School football team Send Off.

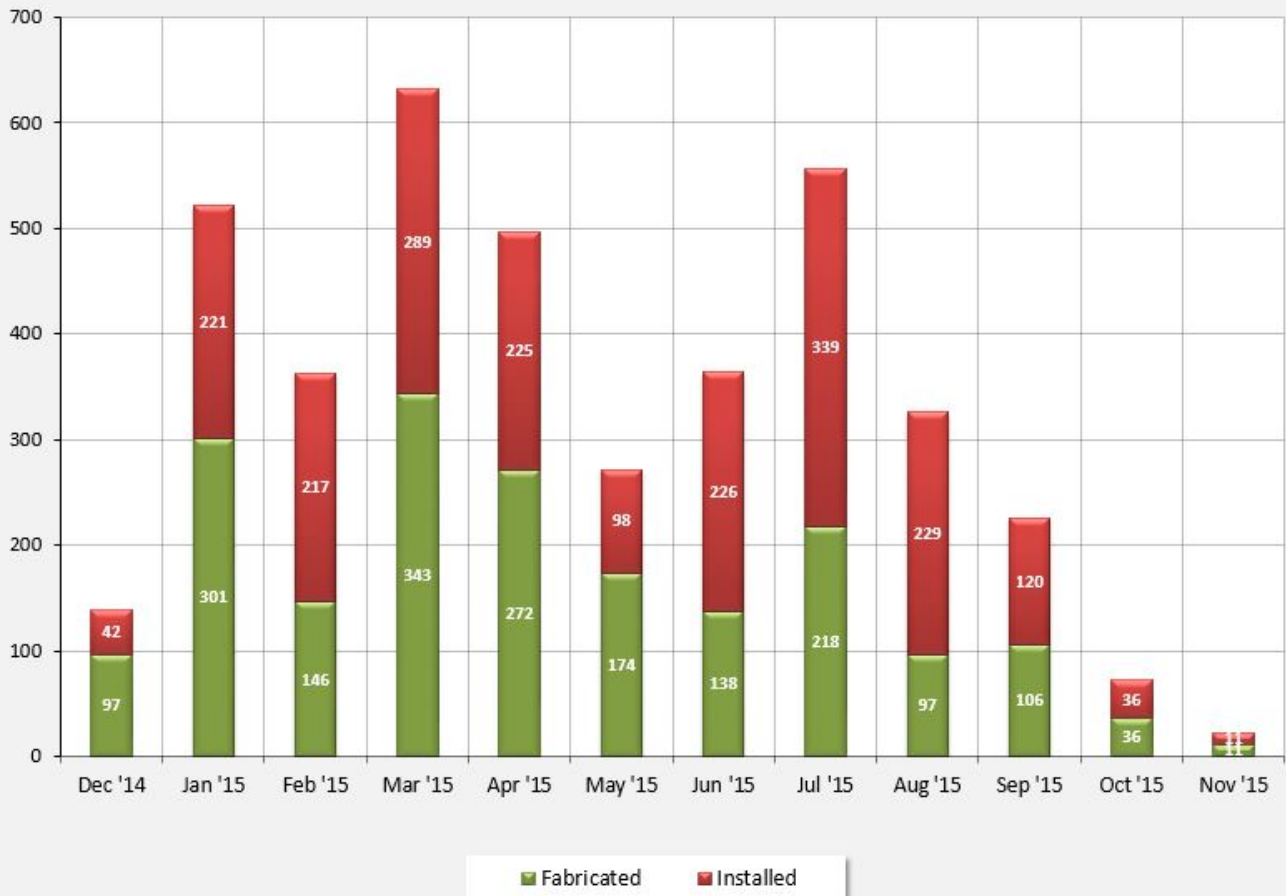
City crews also operate and maintain 171 school zone flashers, two pedestrian crossing flashers, six warning sign flashers, and two sets of pedestrian-activated flashing beacons (RRFB). City crews are in the process of upgrading the school zone flashers to have new cellular modems for remote communication, which replaces their current pager technology which has been discontinued.

Roadway Lighting Maintenance – In general, city crews operate and maintain roadway lighting along major thoroughfares and the power companies operate and maintain the street lights within neighborhoods. City crews performed lighting repairs at several locations during the month, including replacing bulbs and replacing poles that were knocked down.

Total light poles maintained by City	3,274
Total lamp fixtures maintained by City	5,778
Proportion of City lighting currently operating	97%

Signs & Markings Maintenance – City crews install and maintain traffic control signs and pavement markings on the public streets. This division tracks all signs in the public right-of-way that have been installed by developers and City crews and has an annual program to check the status of existing signs and pavement markings. This month crews have completed the modification of the pavement marking reflectors on Hutson Drive at the signalized intersection with Preston Road to allow the traffic signal to operate with flashing yellow arrows in the eastbound and westbound directions. The crews are also continuing their program to replace pavement markings for schools zones that are faded.

Traffic Control Regulatory Signs 12-Month History



*Highlighted portions notate changes from previous month's report.